```
ISIS-II PL/M-86 V2.0 COMPILATION OF MODULE CMAC1
OBJECT MODULE PLACED IN CMAC1.OBJ
COMPILER INVOKED BY:  :F0: CMAC1.PLM DEBUG OPTIMIZE(2) DATE(FEBRUARY 2, 1982)


            $title ('CODEMACRO DEFINITIONS - PART 1')
  1         cmac1:
            do;

            $include (:f1:macro.lit)
        =   $nolist
            $include (:f1:cmacd.lit)
        =   $nolist
            $include (:f1:equals.lit)
        =   $nolist
            $include (:f1:cmac.lit)
        =   $nolist

                  /* Code-macro table: */

 13   1     dcl

                  /* AAA */
            aaa1  cmac3struc public data(
                  nil,0,
                  mdbn,37h,           /* DB 37H */
                  mendm),             /* ENDM */

                  /* AAD */
            aad1  cmac4struc public data(
                  nil,0,
                  mdwn,0d5h,0ah,      /* DW 0AD5H */
                  mendm),             /* ENDM */

                  /* AAM */
            aam1  cmac4struc public data(
                  nil,0,
                  mdwn,0d4h,0ah,      /* DW 0AD4H */
                  mendm),             /* ENDM */

                  /* AAS */
            aas1  cmac3struc public data(
                  nil,0,
                  mdbn,3fh,           /* DB 3FH */
                  mendm),             /* ENDM */

                  /* ADC dst:Eb,src:Db */
            adc1  cmac14struc data(
                  nil,2,
                  specE,modb,
                  specD,modb,
                  msegfix,dst,        /* SEGFIX dst */
                  mdbn,80h,           /* DB 80H */
                  mmodrm1,2,dst,      /* MODRM 2,dst */
                  mdbf,src,           /* DB src */
                  mendm),             /* ENDM */
```

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```
        /* ADC dst:Ew,src:Db */
adc2    cmac14struc data(
        ,adc1,2,
        specE,modw,
        specD,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,81h,           /* DB 81H */
        mmodrm1,2,dst,      /* MODRM 2,dst */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* ADC dst:Ew,src:Dsb */
adc3    cmac14struc data(
        ,adc2,2,
        specE,modw,
        specD,modsb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,83h,           /* DB 83H */
        mmodrm1,2,dst,      /* MODRM 2,dst */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* ADC dst:Ew,src:Dw */
adc4    cmac14struc data(
        ,adc3,2,
        specE,modw,
        specD,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,81h,           /* DB 81H */
        mmodrm1,2,dst,      /* MODRM 2,dst */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* ADC dst:Ab,src:Db */
adc5    cmac9struc data(
        ,adc4,2,
        specA,modb,
        specD,modb,
        mdbn,14h,           /* DB 14H */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* ADC dst:Aw,src:Db */
adc6    cmac9struc data(
        ,adc5,2,
        specA,modw,
        specD,modb,
        mdbn,15h,           /* DB 15H */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* ADC dst:Aw,src:Dw */
adc7    cmac9struc data(
        ,adc6,2,
        specA,modw,
        specD,modw,
```

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```
        mdbn,15h,           /* DB 15H */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* ADC dst:Eb,src:Rb */
adc8    cmac12struc data(
        .adc7,2,
        specE,modb,
        specR,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,10h,           /* DB 10H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* ADC dst:Ew,src:Rw */
adc9    cmac12struc data(
        .adc8,2,
        specE,modw,
        specR,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,11h,           /* DB 11H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* ADC dst:Rb,src:Eb */
adc10   cmac12struc data(
        .adc9,2,
        specR,modb,
        specE,modb,
        msegfix,src,        /* SEGFIX src */
        mdbn,12h,           /* DB 12H */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* ADC dst:Rw,src:Ew */
adc11   cmac12struc public data(
        .adc10,2,
        specR,modw,
        specE,modw,
        msegfix,src,        /* SEGFIX src */
        mdbn,13h,           /* DB 13H */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* ADD dst:Eb,src:Db */
add1    cmac14struc data(
        nil,2,
        specE,modb,
        specD,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,80h,           /* DB 80H */
        mmodrm1,0,dst,      /* MODRM 0,dst */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* ADD dst:Ew,src:Db */
add2    cmac14struc data(
```

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```
        ,add1,2,
        specE,modw,
        specD,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,81h,           /* DB 81H */
        mmodrm1,0,dst,      /* MODRM 0,dst */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* ADD dst:Ew,src:Dsb */
add3    cmac14struc data(
        ,add2,2,
        specE,modw,
        specD,modsb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,83h,           /* DB 83H */
        mmodrm1,0,dst,      /* MODRM 0,dst */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* ADD dst:Ew,src:Dw */
add4    cmac14struc data(
        ,add3,2,
        specE,modw,
        specD,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,81h,           /* DB 81H */
        mmodrm1,0,dst,      /* MODRM 0,dst */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* ADD dst:Ab,src:Db */
add5    cmac9struc data(
        ,add4,2,
        specA,modb,
        specD,modb,
        mdbn,04h,           /* DB 04H */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* ADD dst:Aw,src:Db */
add6    cmac9struc data(
        ,add5,2,
        specA,modw,
        specD,modb,
        mdbn,05h,           /* DB 05H */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* ADD dst:Aw,src:Dw */
add7    cmac9struc data(
        ,add6,2,
        specA,modw,
        specD,modw,
        mdbn,05h,           /* DB 05H */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */
```

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```
        /* ADD dst:Eb,src:Rb */
add8    cmac12struc data(
        .add7,2,
        specE,modb,
        specR,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0,             /* DB 00H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* ADD dst:Ew,src:Rw */
add9    cmac12struc data(
        .add8,2,
        specE,modw,
        specR,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,1,             /* DB 01H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* ADD dst:Rb,src:Eb */
add10   cmac12struc data(
        .add9,2,
        specR,modb,
        specE,modb,
        msegfix,src,        /* SEGFIX src */
        mdbn,2,             /* DB 02H */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* ADD dst:Rw,src:Ew */
add11   cmac12struc public data(
        .add10,2,
        specR,modw,
        specE,modw,
        msegfix,src,        /* SEGFIX src */
        mdbn,3,             /* DB 03H */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* AND dst:Eb,src:Db */
and1    cmac14struc data(
        nil,2,
        specE,modb,
        specD,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,80h,           /* DB 80H */
        mmodrm1,4,dst,      /* MODRM 4,dst */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* AND dst:Ew,src:Db */
and2    cmac14struc data(
        .and1,2,
        specE,modw,specD,modb,
        msegfix,dst,        /* SEGFIX dst */
```

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```
        mdbn,81h,           /* DB 81H */
        mmodrm1,4,dst,      /* MODRM 4,dst */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* AND dst:Ew,src:Dw */
and3    cmac14struc data(
        ,and2,2,
        specE,modw,specD,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,81h,           /* DB 81H */
        mmodrm1,4,dst,      /* MODRM 4,dst */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* AND dst:Ab,src:Db */
and4    cmac9struc data(
        ,and3,2,
        specA,modb,specD,modb,
        mdbn,24h,           /* DB 24H */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* AND dst:Aw,src:Db */
and5    cmac9struc data(
        ,and4,2,
        specA,modw,specD,modb,
        mdbn,25h,           /* DB 25H */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* AND dst:Aw,src:Dw */
and6    cmac9struc data(
        ,and5,2,
        specA,modw,specD,modw,
        mdbn,25h,           /* DB 25H */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* AND dst:Eb,src:Rb */
and7    cmac12struc data(
        ,and6,2,
        specE,modb,specR,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,20h,           /* DB 20H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* AND dst:Ew,src:Rw */
and8    cmac12struc data(
        ,and7,2,
        specE,modw,specR,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,21h,           /* DB 21H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),
```

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```
        /* AND dst:Rb,src:Eb */
and9    cmac12struc data(
        ,and8,2,
        specR,modb,specE,modb,
        msegfix,src,        /* SEGFIX src */
        mdbn,22h,           /* DB 22H */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* AND dst:Rw,src:Ew */
and10   cmac12struc public data(
        ,and9,2,
        specR,modw,specE,modw,
        msegfix,src,-       /* SEGFIX src */
        mdbn,23h,           /* DB 23H */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* CALL adr:Ew */
call1   cmac10struc data(
        nil,1,
        specE,modw,
        msegfix,adr,        /* SEGFIX adr */
        mdbn,0ffh,          /* DB OFFH */
        mmodrm1,2,adr,      /* MODRM 2,adr */
        mendm),             /* ENDM */

        /* CALL adr:Cb */
call2   cmac7struc data(
        ,call1,1,
        specC,modb,
        mdbn,0e8h,          /* DB 0E8H */
        mrelw,adr,          /* RELW adr */
        mendm),             /* ENDM */

        /* CALL adr:Cw */
call3   cmac7struc public data(
        ,call2,1,
        specC,modw,
        mdbn,0e8h,          /* DB 0E8H */
        mrelw,adr,          /* RELW adr */
        mendm),             /* ENDM */

        /* CALLF adr:Ed */
callf1  cmac10struc data(
        nil,1,
        specE,modd,
        msegfix,adr,        /* SEGFIX adr */
        mdbn,0ffh,          /* DB OFFH */
        mmodrm1,3,adr,      /* MODRM 3,adr */
        mendm),             /* ENDM */

        /* CALLF adr:Cd */
callf2  cmac7struc public data(
        ,callf1,1,
        specC,modd,
        mdbn,9ah,           /* DB 9AH */
```

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```
        mddf,adr,           /* DD adr */
        mendm),             /* ENDM */

        /* CBW */
cbwi    cmac3struc public data(
        nil,0,
        mdbn,98h,           /* DB 98H */
        mendm),             /* ENDM */

        /* CLC */
clci    cmac3struc public data(
        nil,0,
        mdbn,0f8h,          /* DB 0F8H */
        mendm),             /* ENDM */

        /* CLD */
cldi    cmac3struc public data(
        nil,0,
        mdbn,0fch,          /* DB 0FCH */
        mendm),             /* ENDM */

        /* CLI */
cliI    cmac3struc public data(
        nil,0,
        mdbn,0fah,          /* DB 0FAH */
        mendm),             /* ENDM */

        /* CMC */
cmci    cmac3struc public data(
        nil,0,
        mdbn,0f5h,          /* DB 0F5H */
        mendm),             /* ENDM */

        /* CMP dst:Eb,src:Db */
cmpi    cmac14struc data(
        nil,2,
        specE,modb,specD,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,80h,           /* DB 80H */
        mmodrmi,7,dst,      /* MODRM 7,dst */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* CMP dst:Ew,src:Db */
cmp2    cmac14struc data(
        .cmpi,2,
        specE,modw,specD,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,81h,           /* DB 81H */
        mmodrmi,7,dst,      /* MODRM 7,dst */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* CMP dst:Ew,src:Dsb */
cmp3    cmac14struc data(
        .cmp2,2,
        specE,modw,specD,modsb,
```

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```
        msegfix,dst,        /* SEGFIX dst */
        mdbn,83h,           /* DB 83H */
        mmodrm1,7,dst,      /* MODRM 7,dst */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* CMP dst:Ew,src:Dw */
cmp4    cmac14struc data(
        ,cmp3,2,
        specE,modw,specD,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,81h,           /* DB 81H */
        mmodrm1,7,dst,      /* MODRM 7,dst */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* CMP dst:Ab,src:Db */
cmp5    cmac9struc data(
        ,cmp4,2,
        specA,modb,specD,modb,
        mdbn,3ch,           /* DB 3CH */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* CMP dst:Aw,src:Db */
cmp6    cmac9struc data(
        ,cmp5,2,
        specA,modw,specD,modb,
        mdbn,3dh,           /* DB 3DH */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* CMP dst:Aw,src:Dw */
cmp7    cmac9struc data(
        ,cmp6,2,
        specA,modw,specD,modw,
        mdbn,3dh,           /* DB 3DH */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* CMP dst:Eb,src:Rb */
cmp8    cmac12struc data(
        ,cmp7,2,
        specE,modb,specR,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,38h,           /* DB 38H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* CMP dst:Ew,src:Rw */
cmp9    cmac12struc data(
        ,cmp8,2,
        specE,modw,specR,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,39h,           /* DB 39H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */
```

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```
                /* CMP dst:Rb,src:Eb */
        cmp10   cmac12struc data(
                ,cmp9,2,
                specR,modb,specE,modb,
                msegfix,src,        /* SEGFIX src */
                mdbn,3ah,           /* DB 3AH */
                mmodrm2,dst,src,    /* MODRM dst,src */
                mendm),             /* ENDM */

                /* CMP dst:Rw,src:Ew */
        cmp11   cmac12struc public data(
                ,cmp10,2,
                specR,modw,specE,modw,
                msegfix,src,        /* SEGFIX src */
                mdbn,3bh,           /* DB 3BH */
                mmodrm2,dst,src,    /* MODRM dst,src */
                mendm);             /* ENDM */

 19   1      end$module cmac1;
```

MODULE INFORMATION:

```
     CODE AREA SIZE     = 0000H      0D
     CONSTANT AREA SIZE = 02EFH    751D
     VARIABLE AREA SIZE = 0000H      0D
     MAXIMUM STACK SIZE = 0000H      0D
     826 LINES READ
     0 PROGRAM ERROR(S)

END OF PL/M-86 COMPILATION
```

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```
        mdbn,7ah,           /* DB 7AH */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* JS place:Cb */
jsi     cmac7struc public data(
        nil,1,
        specC,modb,
        mdbn,78h,           /* DB 78H */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* LAHF */
lahfi   cmac3struc public data(
        nil,0,
        mdbn,9fh,           /* DB 9FH */
        mendm),             /* ENDM */

        /* LDS dst:Rw,src:Ed */
ldsi    cmac12struc public data(
        nil,2,
        specR,modw,specE,modd,
        msegfix,src,        /* SEGFIX src */
        mdbn,0c5h,          /* DB 0C5H */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* LES dst:Rw,src:Ed */
lesi    cmac12struc public data(
        nil,2,
        specR,modw,specE,modd,
        msegfix,src,        /* SEGFIX src */
        mdbn,0c4h,          /* DB 0C4H */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* LEA dst:Rw,src:M */
leai    cmac10struc public data(
        nil,2,
        specR,modw,specM,nomod,
        mdbn,8dh,           /* DB 8DH */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* LOCK prefx */
lockI   cmac3struc public data(
        nil,0+prefix$on,
        mdbn,0f0h,          /* DB 0F0H */
        mendm),             /* ENDM */

        /* LODS SI$ptr:Eb */
lodsi   cmac7struc data(
        nil,1,
        specE,modb,
        msegfix,si$ptr,     /* SEGFIX SI$ptr */
        mdbn,0ach,          /* DB 0ACH */
        mendm),             /* ENDM */
```

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```
        specC,modd,
        mdbn,0eah,          /* DB 0EAH */
        mddf,place,         /* DD place */
        mendm),             /* ENDM */

        /* JMPS place:Cb */
jmps1   cmac7struc public data(
        nil,1,
        specC,modb,
        mdbn,0ebh,          /* DB 0EBH */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* JNE place:Cb */
jne1    cmac7struc public data(
        nil,1,
        specC,modb,
        mdbn,75h,           /* DB 75H */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* JNO place:Cb */
jno1    cmac7struc public data(
        nil,1,
        specC,modb,
        mdbn,71h,           /* DB 71H */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* JNP place:Cb */
jnp1    cmac7struc public data(
        nil,1,
        specC,modb,
        mdbn,7bh,           /* DB 7BH */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* JNS place:Cb */
jns1    cmac7struc public data(
        nil,1,
        specC,modb,
        mdbn,79h,           /* DB 79H */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* JO place:Cb */
jo1     cmac7struc public data(
        nil,1,
        specC,modb,
        mdbn,70h,           /* DB 70H */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* JP place:Cb */
jp1     cmac7struc public data(
        nil,1,
        specC,modb,
```

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```
        mdbn,7fh,           /* DB 7FH */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* JGE place:Cb */
jge1    cmac7struc public data(
        nil,1,
        specC,modb,
        mdbn,7dh,           /* DB 7DH */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* JL place:Cb */
jl1     cmac7struc public data(
        nil,1,
        specC,modb,
        mdbn,7ch,           /* DB 7CH */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* JLE place:Cb */
jle1    cmac7struc public data(
        nil,1,
        specC,modb,
        mdbn,7eh,           /* DB 7EH */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* JMP place:Ew */
jmp1    cmac10struc data(
        nil,1,
        specE,modw,
        msegfix,place,      /* SEGFIX place */
        mdbn,0ffh,          /* DB 0FFH */
        mmodrm1,4,place,    /* MODRM 4,place */
        mendm),             /* ENDM */

        /* JMP place:Cw */
jmp2    cmac7struc public data(
        .jmp1,1,
        specC,modw,
        mdbn,0e9h,          /* DB 0E9H */
        mrelw,place,        /* RELW place */
        mendm),             /* ENDM */

        /* JMPF place:Md */
jmpf1   cmac10struc data(
        nil,1,
        specM,modd,
        msegfix,place,      /* SEGFIX place */
        mdbn,0ffh,          /* DB 0FFH */
        mmodrm1,5,place,    /* MODRM 5,place */
        mendm),             /* ENDM */

        /* JMPF place:Cd */
jmpf2   cmac7struc public data(
        .jmpf1,1,
```

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```
iret1   cmac3struc public data(
        nil,0,
        mdbn,0cfh,          /* DB 0CFH */
        mendm),             /* ENDM */

        /* JA place:Cb */
ja1     cmac7struc public data(
        nil,1,
        specC,modb,
        mdbn,77h,           /* DB 77H */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* JAE place:Cb */
jae1    cmac7struc public data(
        nil,1,
        specC,modb,
        mdbn,73h,           /* DB 73H */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* JB place:Cb */
jb1     cmac7struc public data(
        nil,1,
        specC,modb,
        mdbn,72h,           /* DB 72H */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* JBE place:Cb */
jbe1    cmac7struc public data(
        nil,1,
        specC,modb,
        mdbn,76h,           /* DB 76H */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* JCXZ place:Cb */
jcxz1   cmac7struc public data(
        nil,1,
        specC,modb,
        mdbn,0e3h,          /* DB 0E3H */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* JE place:Cb */
je1     cmac7struc public data(
        nil,1,
        specC,modb,
        mdbn,74h,           /* DB 74H */
        mrelb,place,        /* RELB place */
        mendm),             /* ENDM */

        /* JG place:Cb */
jg1     cmac7struc public data(
        nil,1,
        specC,modb,
```

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```
                .in3,2,
                specA,modw,
                specR,modw+singlerange+register$range,rdx,
                mdbn,0edh,          /* DB 0EDH */
                mendm),             /* ENDM */

                /* INC dst:Eb */
        inc1    cmac10struc data(
                nil,1,
                specE,modb,
                msegfix,dst,        /* SEGFIX dst */
                mdbn,0feh,          /* DB 0FEH */
                mmodrm1,0,dst,      /* MODRM 0,dst */
                mendm),             /* ENDM */

                /* INC dst:Ew */
        inc2    cmac10struc data(
                .inc1,1,
                specE,modw,
                msegfix,dst,        /* SEGFIX dst */
                mdbn,0ffh,          /* DB 0FFH */
                mmodrm1,0,dst,      /* MODRM 0,dst */
                mendm),             /* ENDM */

                /* INC dst:Rw */
        inc3    cmac12struc public data(
                .inc2,1,
                specR,modw,
                mdbit,              /* DBIT 5(08H),3(dst(0)) */
                mnumberbits,5,08h,
                mformalbits,3,dst,0,
                mendbit,
                mendm),             /* ENDM */

                /* INT itype:Db */
        int1    cmac7struc data(
                nil,1,
                specD,modb,
                mdbn,0cdh,          /* DB 0CDH */
                mdbf,itype,         /* DB itype */
                mendm),             /* ENDM */

                /* INT itype:Db(3) */
        int2    cmac6struc public data(
                .int1,1,
                specD,modb+singlerange,3,
                mdbn,0cch,          /* DB 0CCH */
                mendm),             /* ENDM */

                /* INTO */
        into1   cmac3struc public data(
                nil,0,
                mdbn,0ceh,          /* DB 0CEH */
                mendm),             /* ENDM */


                /* IRET */
```

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```
        mdbn,0f6h,          /* DB 0F6H */
        mmodrm1,7,divisor,  /* MODRM 7,divisor */
        mendm),             /* ENDM */

        /* IDIV divisor:Ew */
idiv2   cmac10struc public data(
        .idiv1,1,
        specE,modw,
        msegfix,divisor,    /* SEGFIX divisor */
        mdbn,0f7h,          /* DB 0F7H */
        mmodrm1,7,divisor,  /* MODRM 7,divisor */
        mendm),

        /* IMUL mplier:Eb */
imul1   cmac10struc data(
        nil,1,
        specE,modb,
        msegfix,mplier,     /* SEGFIX mplier */
        mdbn,0f6h,          /* DB 0F6H */
        mmodrm1,5,mplier,   /* MODRM 5,mplier */
        mendm),             /* ENDM */

        /* IMUL mplier:Ew */
imul2   cmac10struc public data(
        .imul1,1,
        specE,modw,
        msegfix,mplier,     /* SEGFIX mplier */
        mdbn,0f7h,          /* DB 0F7H */
        mmodrm1,5,mplier,   /* MODRM 5,mplier */
        mendm),             /* ENDM */

        /* IN dst:Ab,port:Db */
in1     cmac9struc data(
        nil,2,
        specA,modb,specD,modb,
        mdbn,0e4h,          /* DB 0E4H */
        mdbf,port,          /* DB port */
        mendm),             /* ENDM */

        /* IN dst:Aw,port:Db */
in2     cmac9struc data(
        .in1,2,
        specA,modw,specD,modb,
        mdbn,0e5h,          /* DB 0E5H */
        mdbf,port,          /* DB port */
        mendm),             /* ENDM */

        /* IN dst:Ab,port:Rw(DX) */
in3     cmac8struc data(
        .in2,2,
        specA,modb,
        specR,modw+singlerange+register$range,rdx,
        mdbn,0ech,          /* DB 0ECH */
        mendm),

        /* IN dst:Aw,port:Rw(DX) */
in4     cmac8struc public data(
```

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```
        ,div1,1,
        specE,modw,
        msegfix,divisor,     /* SEGFIX divisor */
        mdbn,0f7h,           /* DB 0F7H */
        mmodrm1,6,divisor,   /* MODRM 6,divisor */
        mendm),              /* ENDM */

        /* ESC opcode:Db(0,63),src:Eb */
esc1    cmac21struc data(
        nil,2,
        specD,modb+doublerange+numberrange,0,63,
        specE,modb,
        msegfix,src,         /* SEGFIX src */
        mdbit,               /* DBIT 5(1BH),3(opcode(3)) */
        mnumberbits,5,1bh,
        mformalbits,3,opcode,3,
        mendbit,
        mmodrm2,opcode,src,  /* MODRM opcode,src */
        mendm),              /* ENDM */

        /* ESC opcode:Db(0,63),src:Ew */
esc2    cmac21struc data(
        ,esc1,2,
        specD,modb+doublerange+numberrange,0,63,
        specE,modw,
        msegfix,src,         /* SEGFIX src */
        mdbit,               /* DBIT 5(1BH),3(opcode(3)) */
        mnumberbits,5,1bh,
        mformalbits,3,opcode,3,
        mendbit,
        mmodrm2,opcode,src,  /* MODRM opcode,src */
        mendm),              /* ENDM */

        /* ESC opcode:Db(0,63),src:Ed */
esc3    cmac21struc public data(
        ,esc2,2,
        specD,modb+doublerange+numberrange,0,63,
        specE,modd,
        msegfix,src,         /* SEGFIX src */
        mdbit,               /* DBIT 5(1BH),3(opcode(3)) */
        mnumberbits,5,1bh,
        mformalbits,3,opcode,3,
        mendbit,
        mmodrm2,opcode,src,  /* MODRM opcode,src */
        mendm),              /* ENDM */

        /* HLT */
hlt1    cmac3struc public data(
        nil,0,
        mdbn,0f4h,           /* DB 0F4H */
        mendm),              /* ENDM */

        /* IDIV divisor:Eb */
idiv1   cmac10struc data(
        nil,1,
        specE,modb,
        msegfix,divisor,     /* SEGFIX divisor */
```

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```
        /* CWD */
cwd1    cmac3struc public data(
        nil,0,
        mdbn,99h,           /* DB 99H */
        mendm),             /* ENDM */

        /* DAA */
daa1    cmac3struc public data(
        nil,0,
        mdbn,27h,           /* DB 27H */
        mendm),             /* ENDM */

        /* DAS */
das1    cmac3struc public data(
        nil,0,
        mdbn,2fh,           /* DB 2FH */
        mendm),             /* ENDM */

        /* DEC dst:Eb */
dec1    cmac10struc data(
        nil,1,
        specE,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0feh,          /* DB 0FEH */
        mmodrm1,1,dst,      /* MODRM 1,dst */
        mendm),             /* ENDM */

        /* DEC dst:Ew */
dec2    cmac10struc data(
        .dec1,1,
        specE,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0ffh,          /* DB 0FFH */
        mmodrm1,1,dst,      /* MODRM 1,dst */
        mendm),             /* ENDM */

        /* DEC dst:Rw */
dec3    cmac12struc public data(
        .dec2,1,
        specR,modw,
        mdbit,              /* DBIT 5(9H),3(dst) */
        mnumberbits,5,9h,
        mformalbits,3,dst,0,
        mendbit,
        mendm),

        /* DIV divisor:Eb */
div1    cmac10struc data(
        nil,1,
        specE,modb,
        msegfix,divisor,    /* SEGFIX divisor */
        mdbn,0f6h,          /* DB 6FH */
        mmodrm1,6,divisor,  /* MODRM divisor */
        mendm),             /* ENDM */

        /* DIV divisor:Ew */
div2    cmac10struc public data(
```

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```
ISIS-II PL/M-86 V2.0 COMPILATION OF MODULE CMAC2
OBJECT MODULE PLACED IN CMAC2.OBJ
COMPILER INVOKED BY:  :F0: CMAC2.PLM DEBUG OPTIMIZE(2) DATE(FEBRUARY 2, 1982)


                $title ('CODEMACRO DEFINITIONS - PART 2')
  1             cmac2:
                do;

                /*

                  modified  6/16/81  R. Silberstein

                */

                $include (:f1:macro.lit)
            =   $nolist
                $include (:f1:cmacd.lit)
            =   $nolist
                $include (:f1:equals.lit)
            =   $nolist
                $include (:f1:cmac.lit)
            =   $nolist

 18  1          dcl

                        /* CMPS dst:Eb,src:Eb */
                  cmps1 cmac12struc data(
                        nil,2,
                        specE,modb,specE,modb,
                        mnosegfix,res,dst,   /* NOSEGFIX ES,dst */
                        msegfix,src,         /* SEGFIX src */
                        mdbn,0a6h,           /* DB 0A6H */
                        mendm),              /* ENDM */

                        /* CMPS dst:Ew,src:Ew */
                  cmps2 cmac12struc public data(
                        .cmps1,2,
                        specE,modw,specE,modw,
                        mnosegfix,res,dst,   /* NOSEGFIX ES,dst */
                        msegfix,src,         /* SEGFIX src */
                        mdbn,0a7h,           /* DB 0A7H */
                        mendm),              /* ENDM */

                        /* CMPSB */
                 CMPSB1 CMAC3STRUC PUBLIC DATA(
                        NIL,0,
                        MDBN,0A6H,
                        MENDM),

                        /* CMPSW */
                 CMPSW1 CMAC3STRUC PUBLIC DATA(
                        NIL,0,
                        MDBN,0A7H,
                        MENDM),
```

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```
                /* LODS SI$ptr:Ew */
        lods2   cmac7struc public data(
                .lods1,1,
                specE,modw,
                msegfix,si$ptr,     /* SEGFIX SI$ptr */
                mdbn,0adh,          /* DB 0AdH */
                mendm),             /* ENDM */

                /* LODSB */
        LODSB1  CMAC3STRUC PUBLIC DATA(
                NIL,0,
                MDBN,0ACH,
                MENDM),

                /* LODSW */
        LODSW1  CMAC3STRUC PUBLIC DATA(
                NIL,0,
                MDBN,0ADH,
                MENDM),

                /* LOOP place:Cb */
        loop1   cmac7struc public data(
                nil,1,
                specC,modb,
                mdbn,0e2h,          /* DB 0E2H */
                mrelb,place,        /* RELB place */
                mendm),             /* ENDM */

                /* LOOPE place:Cb */
        loope1  cmac7struc public data(
                nil,1,
                specC,modb,
                mdbn,0e1h,          /* DB 0E1H */
                mrelb,place,        /* RELB place */
                mendm),             /* ENDM */

                /* LOOPNE place:Cb */
        loopne1 cmac7struc public data(
                nil,1,
                specC,modb,
                mdbn,0e0h,          /* DB 0E0H */
                mrelb,place,        /* RELB place */
                mendm);             /* ENDM */

19  1   end$module cmac2;
```

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MODULE INFORMATION:

```
  CODE AREA SIZE     = 0000H      0D
  CONSTANT AREA SIZE = 02CEH    718D
  VARIABLE AREA SIZE = 0000H      0D
  MAXIMUM STACK SIZE = 0000H      0D
  952 LINES READ
  0 PROGRAM ERROR(S)
```

END OF PL/M-86 COMPILATION

CP/M-86 v.1.1 (Vol. IV)
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```
ISIS-II PL/M-86 V2.0 COMPILATION OF MODULE CMAC3
OBJECT MODULE PLACED IN CMAC3.OBJ
COMPILER INVOKED BY:  :F0:CMAC3.PLM DEBUG OPTIMIZE(2) DATE(FEBRUARY 2, 1982)


          $title ('CODEMACRO DEFINITIONS - PART 3')
  1       cmac3:
          do;

          /*

            modified  6/16/81  R. Silberstein

          */

          $include (:f1:macro.lit)
      =   $nolist
          $include (:f1:cmacd.lit)
      =   $nolist
          $include (:f1:equals.lit)
      =   $nolist
          $include (:f1:cmac.lit)
      =   $nolist

 18   1     dcl

                /* MOV dst:Eb,src:Db */
            mov1    cmac14struc data(
                nil,2,
                specE,modb,specD,modb,
                msegfix,dst,        /* SEGFIX dst */
                mdbn,0c6h,          /* DB 0C6h */
                mmodrm1,0,dst,      /* MODRM 0,dst */
                mdbf,src,           /* DB src */
                mendm),             /* ENDM */

                /* MOV dst:Ew,src:Db */
            mov2    cmac14struc data(
                .mov1,2,
                specE,modw,specD,modb,
                msegfix,dst,        /* SEGFIX dst */
                mdbn,0c7h,          /* DB 0C7h */
                mmodrm1,0,dst,      /* MODRM 0,dst */
                mdwf,src,           /* DW src */
                mendm),             /* ENDM */

                /* MOV dst:Ew,src:Dw */
            mov3    cmac14struc data(
                .mov2,2,
                specE,modw,specD,modw,
                msegfix,dst,        /* SEGFIX dst */
                mdbn,0c7h,          /* DB 0C7h */
                mmodrm1,0,dst,      /* MODRM 0,dst */
                mdwf,src,           /* DW src */
                mendm),             /* ENDM */
```

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```
        /* MOV dst:Rb,src:Db */
mov4    cmac16struc data(
        ,mov3,2,
        specR,modb,specD,modb,
        mdbit,              /* DBIT 5(10110B),3(dst(0)) */
        mnumberbits,5,16h,
        mformalbits,3,dst,0,
        mendbit,
        mdbf,src,           /* DB sr  */
        mendm),             /* ENDM */

        /* MOV dst:Rw,src:Db */
mov5    cmac16struc data(
        ,mov4,2,
        specR,modw,specD,modb,
        mdbit,              /* DBIT 5(10111B),3(dst(0)) */
        mnumberbits,5,17h,
        mformalbits,3,dst,0,
        mendbit,
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* MOV dst:Rw,src:Dw */
mov6    cmac16struc data(
        ,mov5,2,
        specR,modw,specD,modw,
        mdbit,              /* DBIT 5(10111B),3(dst(0)) */
        mnumberbits,5,17h,
        mformalbits,3,dst,0,
        mendbit,
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* MOV dst:Eb,src:Rb */
mov7    cmac12struc data(
        ,mov6,2,
        specE,modb,specR,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,88h,           /* DB 88H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* MOV dst:Ew,src:Rw */
mov8    cmac12struc data(
        ,mov7,2,
        specE,modw,specR,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,89h,           /* DB 89H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* MOV dst:Rb,src:Eb */
mov9    cmac12struc data(
        ,mov8,2,
        specR,modb,specE,modb,
        msegfix,src,        /* SEGFIX src */
        mdbn,8ah,           /* DB 8AH */
```

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```
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* MOV dst:Rw,src:Ew */
mov10   cmac12struc data(
        ,mov9,2,
        specR,modw,specE,modw,
        msegfix,src,        /* SEGFIX src */
        mdbn,8bh,           /* DB 8BH */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* MOV dst:Ew,src:S */
mov11   cmac12struc data(
        ,mov10,2,
        specE,modw,specS,nomod,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,8ch,           /* DB 8CH */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* MOV dst:Sd(ES),src:Ew */
mov12   cmac13struc data(
        ,mov11,2,
        specS,modd+singlerange+registerrange,res,
        specE,modw,
        msegfix,src,        /* SEGFIX src */
        mdbn,8eh,           /* DB 8EH */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* MOV dst:Sd(SS,DS),src:Ew */
mov13   cmac14struc data(
        ,mov12,2,
        specS,modd+doublerange+registerrange,rss,rds,
        specE,modw,
        msegfix,src,        /* SEGFIX src */
        mdbn,8eh,           /* DB 8EH */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* MOV dst:Ab,src:Xb */
mov14   cmac11struc data(
        ,mov13,2,
        specA,modb,specX,modb,
        msegfix,src,        /* SEGFIX src */
        mdbn,0a0h,          /* DB 0A0H */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* MOV dst:Aw,src:Xw */
mov15   cmac11struc data(
        ,mov14,2,
        specA,modw,specX,modw,
        msegfix,src,        /* SEGFIX src */
        mdbn,0a1h,          /* DB 0A1H */
        mdwf,src,           /* DW src */
```

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```
        mendm),             /* ENDM */

        /* MOV dst!Xb,src!Ab */
mov16   cmac11struc data(
        .mov15,2,
        specX,modb,specA,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0a2h,          /* DB 0A2H */
        mdwf,dst,           /* DW dst */
        mendm),             /* ENDM */

        /* MOV dst!Xw,src!Aw */
mov17   cmac11struc public data(
        .mov16,2,
        specX,modw,specA,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0a3h,          /* DB 0A3H */
        mdwf,dst,           /* DW dst */
        mendm),             /* ENDM */

        /* MOVS SI$ptr!Eb,DI$ptr!Eb */
movs1   cmac12struc data(
        nil,2,
        specE,modb,specE,modb,
        mnosegfix,res,si$ptr, /* NOSEGFIX ES,SI$ptr */
        msegfix,di$ptr,     /* SEGFIX DI$ptr */
        mdbn,0a4h,          /* DB 0A4H */
        mendm),             /* ENDM */

        /* MOVS SI$ptr!Ew,DI$ptr!Ew */
movs2   cmac12struc public data(
        .movs1,2,
        specE,modw,specE,modw,
        mnosegfix,res,si$ptr, /* NOSEGFIX ES,SI$ptr */
        msegfix,di$ptr,     /* SEGFIX DI$ptr */
        mdbn,0a5h,          /* DB 0A5H */
        mendm),             /* ENDM */

        /* MOVSB */
MOVSB1  CMAC3STRUC PUBLIC DATA(
        NIL,0,
        MDBN,0A4H,
        MENDM),

        /* MOVSW */
MOVSW1  CMAC3STRUC PUBLIC DATA(
        NIL,0,
        MDBN,0A5H,
        MENDM),

        /* MUL mplier!Eb */
mul1    cmac10struc data(
        nil,1,
        specE,modb,
        msegfix,mplier,     /* SEGFIX mplier */
        mdbn,0f6h,          /* DB 0F6H */
        mmodrm1,4,mplier,   /* MODRM 4,mplier */
```

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```
        mendm),             /* ENDM */

        /* MUL mplier:Ew */
mul2    cmac10struc public data(
        .mul1,1,
        specE,modw,
        msegfix,mplier,     /* SEGFIX mplier */
        mdbn,0f7h,          /* DB 0F7H */
        mmodrm1,4,mplier,   /* MODRM 4,mplier */
        mendm),             /* ENDM */

        /* NEG dst:Eb */
neg1    cmac10struc data(
        nil,1,
        specE,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0f6h,          /* DB 0F6H */
        mmodrm1,3,dst,      /* MODRM 3,dst */
        mendm),             /* ENDM */

        /* NEG dst:Ew */
neg2    cmac10struc public data(
        .neg1,1,
        specE,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0f7h,          /* DB 0F7H */
        mmodrm1,3,dst,      /* MODRM 3,dst */
        mendm),             /* ENDM */

        /* NOP */
nop1    cmac3struc public data(
        nil,0,
        mdbn,90h,           /* DB 90H */
        mendm),             /* ENDM */

        /* NOT dst:Eb */
not1    cmac10struc data(
        nil,1,
        specE,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0f6h,          /* DB 0F6H */
        mmodrm1,2,dst,      /* MODRM 2,dst */
        mendm),             /* ENDM */

        /* NOT dst:Ew */
not2    cmac10struc public data(
        .not1,1,
        specE,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0f7h,          /* DB 0F7H */
        mmodrm1,2,dst,      /* MODRM 2,dst */
        mendm),             /* ENDM */

        /* OR dst:Eb,src:Db */
or1     cmac14struc data(
        nil,2,
        specE,modb,specD,modb,
```

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```
                msegfix,dst,        /* SEGFIX dst */
                mdbn,80h,           /* DB 80h */
                mmodrm1,1,dst,      /* MODRM 1,dst */
                mdbf,src,           /* DB src */
                mendm),             /* ENDM */

                /* OR dst:Ew,src:Dw */
        or2     cmac14struc data(
                ,or1,2,
                specE,modw,specD,modw,
                msegfix,dst,        /* SEGFIX dst */
                mdbn,81h,           /* DB 81H */
                mmodrm1,1,dst,      /* MODRM 1,dst */
                mdwf,src,           /* DW src */
                mendm),             /* ENDM */

                /* OR dst:Ew,src:Db */
        or3     cmac14struc data(
                ,or2,2,
                specE,modw,specD,modb,
                msegfix,dst,        /* SEGFIX dst */
                mdbn,81h,           /* DB 81H */
                mmodrm1,1,dst,      /* MODRM 1,dst */
                mdwf,src,           /* DW src */
                mendm),             /* ENDM */

                /* OR dst:Ab,src:Db */
        or4     cmac9struc data(
                ,or3,2,
                specA,modb,specD,modb,
                mdbn,0ch,           /* DB 0CH */
                mdbf,src,           /* DB src */
                mendm),             /* ENDM */

                /* OR dst:Aw,src:Db */
        or5     cmac9struc data(
                ,or4,2,
                specA,modw,specD,modb,
                mdbn,0dh,           /* DB 0DH */
                mdwf,src,           /* DW src */
                mendm),             /* ENDM */

                /* OR dst:Aw,src:Dw */
        or6     cmac9struc data(
                ,or5,2,
                specA,modw,specD,modw,
                mdbn,0dh,           /* DB 0DH */
                mdwf,src,           /* DW src */
                mendm),             /* ENDM */

                /* OR dst:Eb,src:Rb */
        or7     cmac12struc data(
                ,or6,2,
                specE,modb,specR,modb,
                msegfix,dst,        /* SEGFIX dst */
                mdbn,08h,           /* DB 08h */
                mmodrm2,src,dst,    /* MODRM src,dst */
```

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```
        mendm),             /* ENDM */

        /* OR dst:Ew,src:Rw */
or8     cmac12struc data(
        ,or7,2,
        specE,modw,specR,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,09h,           /* DB 09h */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* OR dst:Rb,src:Eb */
or9     cmac12struc data(
        ,or8,2,
        specR,modb,specE,modb,
        msegfix,src,        /* SEGFIX src */
        mdbn,0ah,           /* DB 0Ah */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* OR dst:Rw,src:Ew */
or10    cmac12struc public data(
        ,or9,2,
        specR,modw,specE,modw,
        msegfix,src,        /* SEGFIX src */
        mdbn,0bh,           /* DB 0Bh */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* OUT dst:Db,src:Ab */
out1    cmac9struc data(
        nil,2,
        specD,modb,specA,modb,
        mdbn,0e6h,          /* DB 0E6H */
        mdbf,dst,           /* DB dst */
        mendm),             /* ENDM */

        /* OUT dst:Db,src:Aw */
out2    cmac9struc data(
        ,out1,2,
        specD,modb,specA,modw,
        mdbn,0e7h,          /* DB 0E7H */
        mdbf,dst,           /* DB dst */
        mendm),             /* ENDM */

        /* OUT dst:Rw(DX),src:Ab */
out3    cmac8struc data(
        ,out2,2,
        specR,modw+singlerange+registerrange,rdx,
        specA,modb,
        mdbn,0eeh,          /* DB 0EEH */
        mendm),             /* ENDM */

        /* OUT dst:Rw(DX),src:Aw */
out4    cmac8struc public data(
        ,out3,2,
        specR,modw+singlerange+registerrange,rdx,
```

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```
        specA,modw,
        mdbn,0efh,          /* DB 0EFH */
        mendm),             /* ENDM */

        /* POP dst:Ew */
pop1    cmac10struc data(
        nil,1,
        specE,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,8fh,           /* DB 8FH */
        mmodrm1,0,dst,      /* MODRM 0,dst */
        mendm),             /* ENDM */

        /* POP dst:Sd(ES) */
pop2    cmac15struc data(
        ,pop1,1,
        specS,modd+singlerange+registerrange,res,
        mdbit,              /* DBIT 3(0),2(dst(0)),3(7) */
        mnumberbits,3,0,
        mformalbits,2,dst,0,
        mnumberbits,3,7,
        mendbit,
        mendm),             /* ENDM */

        /* POP dst:Sd(SS,DS) */
pop3    cmac17struc data(
        ,pop2,1,
        specS,modd+doublerange+registerrange,rss,rds,
        mdbit,              /* DBIT 3(0),2(dst(0)),3(7) */
        mnumberbits,3,0,
        mformalbits,2,dst,0,
        mnumberbits,3,7,
        mendbit,
        mendm),             /* ENDM */

        /* POP dst:Rw */
pop4    cmac12struc public data(
        ,pop3,1,
        specR,modw,
        mdbit,              /* DBIT 5(01011B),3(dst(0)) */
        mnumberbits,5,0bh,
        mformalbits,3,dst,0,
        mendbit,
        mendm),             /* ENDM */

        /* POPF */
popf1   cmac3struc public data(
        nil,0,
        mdbn,9dh,           /* DB 9DH */
        mendm),             /* ENDM */

        /* PUSH dst:Ew */
push1   cmac10struc data(
        nil,1,
        specE,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0ffh,          /* DB 0FFH */
```

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```
                    mmodrm1,6,dst,          /* MODRM 6,dst */
                    mendm),                 /* ENDM */

                    /* PUSH dst:Sd */
             push2  cmac15struc data(
                    ,push1,1,
                    specS,modd,
                    mdbit,                  /* DBIT 3(0),2(dst(0)),3(6) */
                    mnumberbits,3,0,
                    mformalbits,2,dst,0,
                    mnumberbits,3,6,
                    mendbit,
                    mendm),                 /* ENDM */

                    /* PUSH dst:Rw */
             push3  cmac12struc public data(
                    ,push2,1,
                    specR,modw,
                    mdbit,                  /* DBIT 5(01010B),3(dst(0)) */
                    mnumberbits,5,0ah,
                    mformalbits,3,dst,0,
                    mendbit,
                    mendm),                 /* ENDM */

                    /* PUSHF */
            pushf1  cmac3struc public data(
                    nil,0,
                    mdbn,9ch,               /* DB 9CH */
                    mendm);                 /* ENDM */

 19   1     end$module cmac3;
```

MODULE INFORMATION:

```
    CODE AREA SIZE     = 0000H      0D
    CONSTANT AREA SIZE = 02CCH    716D
    VARIABLE AREA SIZE = 0000H      0D
    MAXIMUM STACK SIZE = 0000H      0D
    780 LINES READ
    0 PROGRAM ERROR(S)
```

END OF PL/M-86 COMPILATION

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```
ISIS-II PL/M-86 V2.0 COMPILATION OF MODULE CMAC4
OBJECT MODULE PLACED IN CMAC4.OBJ
COMPILER INVOKED BY:  :F0:CMAC4.PLM DEBUG OPTIMIZE(2) DATE(FEBRUARY 2, 1982)


            $title ('CODEMACRO DEFINITIONS - PART 4')
  1         cmac4:
            do;

            /*

              modified  6/16/81  R. Silberstein

            */

            $include (:f1:macro.lit)
        =   $nolist
            $include (:f1:cmacd.lit)
        =   $nolist
            $include (:f1:equals.lit)
        =   $nolist
            $include (:f1:cmac.lit)
        =   $nolist

 18   1     dcl

                  /* RCL dst:Eb,count:Db(1) */
            rcl1  cmac13struc data(
                  nil,2,
                  specE,modb,
                  specD,modb+singlerange+number$range,1,
                  msegfix,dst,        /* SEGFIX dst */
                  mdbn,0d0h,          /* DB 0D0H */
                  mmodrml,2,dst,      /* MODRM 2,dst */
                  mendm),             /* ENDM */

                  /* RCL dst:Ew,count:Db(1) */
            rcl2  cmac13struc data(
                  .rcl1,2,
                  specE,modw,
                  specD,modb+singlerange+number$range,1,
                  msegfix,dst,        /* SEGFIX dst */
                  mdbn,0d1h,          /* DB 0D1H */
                  mmodrml,2,dst,      /* MODRM 2,dst */
                  mendm),             /* ENDM */

                  /* RCL dst:Eb,count:Rb(CL) */
            rcl3  cmac13struc data(
                  .rcl2,2,
                  specE,modb,
                  specR,modb+singlerange+register$range,rcl,
                  msegfix,dst,        /* SEGFIX dst */
                  mdbn,0d2h,          /* DB 0D2H */
                  mmodrml,2,dst,      /* MODRM 2,dst */
                  mendm),             /* ENDM */
```

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```
        /* RCL dst:Ew,count:Rb(CL) */
rcl4    cmac13struc public data(
        ,rcl3,2,
        specE,modw,
        specR,modb+singlerange+register$range,rcl,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d3h,          /* DB 0D3H */
        mmodrm1,2,dst,      /* MODRM 2,dst */
        mendm),             /* ENDM */

        /* RCR dst:Eb,count:Db(1) */
rcr1    cmac13struc data(
        nil,2,
        specE,modb,
        specD,modb+singlerange+number$range,1,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d0h,          /* DB 0D0H */
        mmodrm1,3,dst,      /* MODRM 3,dst */
        mendm),             /* ENDM */

        /* RCR dst:Ew,count:Db(1) */
rcr2    cmac13struc data(
        ,rcr1,2,
        specE,modw,
        specD,modb+singlerange+number$range,1,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d1h,          /* DB 0D1H */
        mmodrm1,3,dst,      /* MODRM 3,dst */
        mendm),             /* ENDM */

        /* RCR dst:Eb,count:Rb(CL) */
rcr3    cmac13struc data(
        ,rcr2,2,
        specE,modb,
        specR,modb+singlerange+register$range,rcl,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d2h,          /* DB 0D2H */
        mmodrm1,3,dst,      /* MODRM 3,dst */
        mendm),             /* ENDM */

        /* RCR dst:Ew,count:Rb(CL) */
rcr4    cmac13struc public data(
        ,rcr3,2,
        specE,modw,
        specR,modb+singlerange+register$range,rcl,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d3h,          /* DB 0D3H */
        mmodrm1,3,dst,      /* MODRM 3,dst */
        mendm),             /* ENDM */

        /* REP PREFX */
rep1    cmac3struc public data(
        nil,0+prefix$on,
        mdbn,0f3h,          /* DB 0F3H */
        mendm),             /* ENDM */

        /* REPE PREFX */
```

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```
repe1   cmac3struc public data(
        nil,0+prefix$on,
        mdbn,0f3h,          /* DB 0F3H */
        mendm),             /* ENDM */

        /* REPNE PREFX */
repne1  cmac3struc public data(
        nil,0+prefix$on,
        mdbn,0f2h,          /* DB 0F2H */
        mendm),             /* ENDM */

        /* RET dst:Db */
ret1    cmac7struc data(
        nil,1,
        specD,modb,
        mdbn,0c2h,          /* DB 0C2H */
        mdwf,dst,           /* DW dst */
        mendm),             /* ENDM */

        /* RET dst:Dw */
ret2    cmac7struc data(
        .ret1,1,
        specD,modw,
        mdbn,0c2h,          /* DB 0C2H */
        mdwf,dst,           /* DW dst */
        mendm),             /* ENDM */

        /* RET */
ret3    cmac3struc public data(
        .ret2,0,
        mdbn,0c3h,          /* DB 0C3H */
        mendm),             /* ENDM */

       /* RETF dst:Db */
retf1   cmac7struc data(
        nil,1,
        specD,modb,
        mdbn,0cah,          /* DB 0CAH */
        mdwf,dst,           /* DW dst */
        mendm),             /* ENDM */

        /* RETF dst:Dw */
retf2   cmac7struc data(
        .retf1,1,
        specD,modw,
        mdbn,0cah,          /* DB 0CAH */
        mdwf,dst,           /* DW dst */
        mendm),             /* ENDM */

        /* RETF */
retf3   cmac3struc public data(
        .retf2,0,
        mdbn,0cbh,          /* DB 0C3H */
        mendm),             /* ENDM */

        /* ROL dst:Eb,count:Db(1) */
roll    cmac13struc data(
```

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```
        nil,2,
        specE,modb,
        specD,modb+singlerange+number$range,1,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d0h,          /* DB 0D0H */
        mmodrmi,0,dst,      /* MODRM 0,dst */
        mendm),             /* ENDM */

        /* ROL dst:Ew,count:Db(1) */
rol2    cmac13struc data(
        ,rol1,2,
        specE,modw,
        specD,modb+singlerange+number$range,1,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d1h,          /* DB 0D1H */
        mmodrmi,0,dst,      /* MODRM 0,dst */
        mendm),             /* ENDM */

        /* ROL dst:Eb,count:Rb(CL) */
rol3    cmac13struc data(
        ,rol2,2,
        specE,modb,
        specR,modb+singlerange+register$range,rcl,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d2h,          /* DB 0D2H */
        mmodrmi,0,dst,      /* MODRM 0,dst */
        mendm),             /* ENDM */

        /* ROL dst:Ew,count:Rb(CL) */
rol4    cmac13struc public data(
        ,rol3,2,
        specE,modw,
        specR,modb+singlerange+register$range,rcl,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d3h,          /* DB 0D3H */
        mmodrmi,0,dst,      /* MODRM 0,dst */
        mendm),             /* ENDM */

        /* ROR dst:Eb,count:Db(1) */
ror1    cmac13struc data(
        nil,2,
        specE,modb,
        specD,modb+singlerange+number$range,1,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d0h,          /* DB 0D0H */
        mmodrmi,1,dst,      /* MODRM 1,dst */
        mendm),             /* ENDM */

        /* ROR dst:Ew,count:Db(1) */
ror2    cmac13struc data(
        ,ror1,2,
        specE,modw,
        specD,modb+singlerange+number$range,1,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d1h,          /* DB 0D1H */
        mmodrmi,1,dst,      /* MODRM 1,dst */
        mendm),             /* ENDM */
```

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```
        /* ROR dst:Eb,count:Rb(CL) */
ror3    cmac13struc data(
        ,ror2,2,
        specE,modb,
        specR,modb+singlerange+register$range,rcl,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d2h,          /* DB 0D2H */
        mmodrml,1,dst,      /* MODRM 1,dst */
        mendm),             /* ENDM */

        /* ROR dst:Ew,count:Rb(CL) */
ror4    cmac13struc public data(
        ,ror3,2,
        specE,modw,
        specR,modb+singlerange+register$range,rcl,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d3h,          /* DB 0D3H */
        mmodrml,1,dst,      /* MODRM 1,dst */
        mendm),             /* ENDM */

        /* SAHF */
sahf1   cmac3struc public data(
        nil,0,
        mdbn,9eh,          /* DB 9EH */
        mendm),            /* ENDM */

        /* SAL dst:Eb,count:Db(1) */
sal1    cmac13struc data(
        nil,2,
        specE,modb,
        specD,modb+singlerange+number$range,1,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d0h,          /* DB 0D0H */
        mmodrml,4,dst,      /* MODRM 4,dst */
        mendm),             /* ENDM */

        /* SAL dst:Ew,count:Db(1) */
sal2    cmac13struc data(
        ,sal1,2,
        specE,modw,
        specD,modb+singlerange+number$range,1,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d1h,          /* DB 0D1H */
        mmodrml,4,dst,      /* MODRM 4,dst */
        mendm),             /* ENDM */

        /* SAL dst:Eb,count:Rb(CL) */
sal3    cmac13struc data(
        ,sal2,2,
        specE,modb,
        specR,modb+singlerange+register$range,rcl,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d2h,          /* DB 0D2H */
        mmodrml,4,dst,      /* MODRM 4,dst */
        mendm),             /* ENDM */
```

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```
        /* SAL dst:Ew,count:Rb(CL) */
sal4    cmac13struc public data(
        ,sal3,2,
        specE,modw,
        specR,modb+singlerange+register$range,rcl,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d3h,          /* DB 0D3H */
        mmodrml,4,dst,      /* MODRM 4,dst */
        mendm),             /* ENDM */

        /* SAR dst:Eb,count:Db(1) */
sar1    cmac13struc data(
        nil,2,
        specE,modb,
        specD,modb+singlerange+number$range,1,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d0h,          /* DB 0D0H */
        mmodrml,7,dst,      /* MODRM 7,dst */
        mendm),             /* ENDM */

        /* SAR dst:Ew,count:Db(1) */
sar2    cmac13struc data(
        ,sar1,2,
        specE,modw,
        specD,modb+singlerange+number$range,1,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d1h,          /* DB 0D1H */
        mmodrml,7,dst,      /* MODRM 7,dst */
        mendm),             /* ENDM */

        /* SAR dst:Eb,count:Rb(CL) */
sar3    cmac13struc data(
        ,sar2,2,
        specE,modb,
        specR,modb+singlerange+register$range,rcl,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d2h,          /* DB 0D2H */
        mmodrml,7,dst,      /* MODRM 7,dst */
        mendm),             /* ENDM */

        /* SAR dst:Ew,count:Rb(CL) */
sar4    cmac13struc public data(
        ,sar3,2,
        specE,modw,
        specR,modb+singlerange+register$range,rcl,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d3h,          /* DB 0D3H */
        mmodrml,7,dst,      /* MODRM 7,dst */
        mendm),             /* ENDM */

        /* SBB dst:Eb,src:Db */
sbb1    cmac14struc data(
        nil,2,
        specE,modb,
        specD,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,80h,           /* DB 80H */
```

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SER. #_____

```
        mmodrmi,3,dst,      /* MODRM 3,dst */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* SBB dst:Ew,src:Db */
sbb2    cmac14struc data(
        .sbb1,2,
        specE,modw,
        specD,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,81h,           /* DB 81H */
        mmodrmi,3,dst,      /* MODRM 3,dst */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* SBB dst:Ew,src:Dsb */
sbb3    cmac14struc data(
        .sbb2,2,
        specE,modw,
        specD,modsb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,83h,           /* DB 83H */
        mmodrmi,3,dst,      /* MODRM 3,dst */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* SBB dst:Ew,src:Dw */
sbb4    cmac14struc data(
        .sbb3,2,
        specE,modw,
        specD,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,81h,           /* DB 81H */
        mmodrmi,3,dst,      /* MODRM 3,dst */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* SBB dst:Ab,src:Db */
sbb5    cmac9struc data(
        .sbb4,2,
        specA,modb,
        specD,modb,
        mdbn,1ch,           /* DB 1CH */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* SBB dst:Aw,src:Db */
sbb6    cmac9struc data(
        .sbb5,2,
        specA,modw,
        specD,modb,
        mdbn,1dh,           /* DB 1DH */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* SBB dst:Aw,src:Dw */
sbb7    cmac9struc data(
```

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```
        ,sbb6,2,
        specA,modw,
        specD,modw,
        mdbn,1dh,           /* DB 1DH */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* SBB dst:Eb,src:Rb */
sbb8    cmac12struc data(
        ,sbb7,2,
        specE,modb,
        specR,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,18h,           /* DB 18H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* SBB dst:Ew,src:Rw */
sbb9    cmac12struc data(
        ,sbb8,2,
        specE,modw,
        specR,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,19h,           /* DB 19H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* SBB dst:Rb,src:Eb */
sbb10   cmac12struc data(
        ,sbb9,2,
        specR,modb,
        specE,modb,
        msegfix,src,        /* SEGFIX src */
        mdbn,1ah,           /* DB 1AH */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* SBB dst:Rw,src:Ew */
sbb11   cmac12struc public data(
        ,sbb10,2,
        specR,modw,
        specE,modw,
        msegfix,src,        /* SEGFIX src */
        mdbn,1bh,           /* DB 1BH */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* SCAS dst:Eb */
scas1   cmac8struc data(
        nil,1,
        specE,modb,
        mnosegfix,res,dst,  /* NOSEGFIX ES,dst */
        mdbn,0aeh,          /* DB 0AEH */
        mendm),             /* ENDM */

        /* SCAS dst:Ew */
scas2   cmac8struc public data(
```

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```
        ,scas1,1,
        specE,modw,
        mnosegfix,res,dst, /* NOSEGFIX ES,dst */
        mdbn,0afh,         /* DB 0AFH */
        mendm),            /* ENDM */

        /* SCASB */
SCASB1  CMAC3STRUC PUBLIC DATA(
        NIL,0,
        MDBN,0AEH,
        MENDM),

        /* SCASW */
SCASW1  CMAC3STRUC PUBLIC DATA(
        NIL,0,
        MDBN,0AFH,
        MENDM),

        /* SHR dst:Eb,count:Db(1) */
shr1    cmac13struc data(
        nil,2,
        specE,modb,
        specD,modb+singlerange+number$range,1,
        msegfix,dst,       /* SEGFIX dst */
        mdbn,0d0h,         /* DB 0D0H */
        mmodrm1,5,dst,     /* MODRM 5,dst */
        mendm),            /* ENDM */

        /* SHR dst:Ew,count:Db(1) */
shr2    cmac13struc data(
        ,shr1,2,
        specE,modw,
        specD,modb+singlerange+number$range,1,
        msegfix,dst,       /* SEGFIX dst */
        mdbn,0d1h,         /* DB 0D1H */
        mmodrm1,5,dst,     /* MODRM 5,dst */
        mendm),            /* ENDM */

        /* SHR dst:Eb,count:Rb(CL) */
shr3    cmac13struc data(
        ,shr2,2,
        specE,modb,
        specR,modb+singlerange+register$range,rcl,
        msegfix,dst,       /* SEGFIX dst */
        mdbn,0d2h,         /* DB 0D2H */
        mmodrm1,5,dst,     /* MODRM 5,dst */
        mendm),            /* ENDM */

        /* SHR dst:Ew,count:Rb(CL) */
shr4    cmac13struc public data(
        ,shr3,2,
        specE,modw,
        specR,modb+singlerange+register$range,rcl,
        msegfix,dst,       /* SEGFIX dst */
        mdbn,0d3h,         /* DB 0D3H */
        mmodrm1,5,dst,     /* MODRM 5,dst */
        mendm);            /* ENDM */
```

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SER. # C81-162

```
 19  1      end$module cmac4;


MODULE INFORMATION:

     CODE AREA SIZE     = 0000H      0D
     CONSTANT AREA SIZE = 02D2H    722D
     VARIABLE AREA SIZE = 0000H      0D
     MAXIMUM STACK SIZE = 0000H      0D
     808 LINES READ
     0 PROGRAM ERROR(S)

END OF PL/M-86 COMPILATION
```

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SER. #_____

```
ISIS-II PL/M-86 V2.0 COMPILATION OF MODULE CMAC5
OBJECT MODULE PLACED IN CMAC5.OBJ
COMPILER INVOKED BY:  :F0:CMAC5.PLM DEBUG OPTIMIZE(2) DATE(FEBRUARY 2, 1982)


            $title ('CODEMACRO DEFINITIONS - PART 5')
  1         cmac5:
            do;

            /*

              modified  6/16/81  R. Silberstein

            */

            $include (:f1:macro.lit)
        =   $nolist
            $include (:f1:cmacd.lit)
        =   $nolist
            $include (:f1:equals.lit)
        =   $nolist
            $include (:f1:cmac.lit)
        =   $nolist

 18   1     dcl

                    /* STC */
            stc1    cmac3struc public data(
                    nil,0,
                    mdbn,0f9h,          /* DB 0F9H */
                    mendm),             /* ENDM */

                    /* STD */
            std1    cmac3struc public data(
                    nil,0,
                    mdbn,0fdh,          /* DB 0FDH */
                    mendm),             /* ENDM */

                    /* STI */
            sti1    cmac3struc public data(
                    nil,0,
                    mdbn,0fbh,          /* DB 0FBH */
                    mendm),             /* ENDM */

                    /* STOS dst:Eb */
            stos1   cmac8struc data(
                    nil,1,
                    specE,modb,
                    mnosegfix,res,dst,  /* NOSEGFIX ES,dst */
                    mdbn,0aah,          /* DB 0AAH */
                    mendm),             /* ENDM */

                    /* STOS dst:Ew */
            stos2   cmac8struc public data(
                    ,stos1,1,
                    specE,modw,
```

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```
        mnosegfix,res,dst, /* NOSEGFIX ES,dst */
        mdbn,0abh,         /* DB 0ABH */
        mendm),            /* ENDM */

        /* STOSB */
STOSB1  CMAC3STRUC PUBLIC DATA(
        NIL,0,
        MDBN,0AAH,
        MENDM),

        /* STOSW */
STOSW1  CMAC3STRUC PUBLIC DATA(
        NIL,0,
        MDBN,0ABH,
        MENDM),

        /* SUB dst:Eb,src:Db */
sub1    cmac14struc data(
        nil,2,
        specE,modb,
        specD,modb,
        msegfix,dst,       /* SEGFIX dst */
        mdbn,80h,          /* DB 80H */
        mmodrm1,5,dst,     /* MODRM 5,dst */
        mdbf,src,          /* DB src */
        mendm),            /* ENDM */

        /* SUB dst:Ew,src:Db */
sub2    cmac14struc data(
        .sub1,2,
        specE,modw,
        specD,modb,
        msegfix,dst,       /* SEGFIX dst */
        mdbn,81h,          /* DB 81H */
        mmodrm1,5,dst,     /* MODRM 5,dst */
        mdwf,src,          /* DW src */
        mendm),            /* ENDM */

        /* SUB dst:Ew,src:Dsb */
sub3    cmac14struc data(
        .sub2,2,
        specE,modw,
        specD,modsb,
        msegfix,dst,       /* SEGFIX dst */
        mdbn,83h,          /* DB 83H */
        mmodrm1,5,dst,     /* MODRM 5,dst */
        mdbf,src,          /* DB src */
        mendm),            /* ENDM */

        /* SUB dst:Ew,src:Dw */
sub4    cmac14struc data(
        .sub3,2,
        specE,modw,
        specD,modw,
        msegfix,dst,       /* SEGFIX dst */
        mdbn,81h,          /* DB 81H */
        mmodrm1,5,dst,     /* MODRM 5,dst */
```

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```
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* SUB dst:Ab,src:Db */
sub5    cmac9struc data(
        .sub4,2,
        specA,modb,
        specD,modb,
        mdbn,2ch,           /* DB 2CH */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* SUB dst:Aw,src:Db */
sub6    cmac9struc data(
        .sub5,2,
        specA,modw,
        specD,modb,
        mdbn,2dh,           /* DB 2DH */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* SUB dst:Aw,src:Dw */
sub7    cmac9struc data(
        .sub6,2,
        specA,modw,
        specD,modw,
        mdbn,2dh,           /* DB 2DH */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* SUB dst:Eb,src:Rb */
sub8    cmac12struc data(
        .sub7,2,
        specE,modb,
        specR,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,28h,           /* DB 28H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* SUB dst:Ew,src:Rw */
sub9    cmac12struc data(
        .sub8,2,
        specE,modw,
        specR,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,29h,           /* DB 29H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* SUB dst:Rb,src:Eb */
sub10   cmac12struc data(
        .sub9,2,
        specR,modb,
        specE,modb,
        msegfix,src,        /* SEGFIX src */
        mdbn,2ah,           /* DB 2AH */
```

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SER. #_____

```
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* SUB dst:Rw,src:Ew */
sub11   cmac12struc public data(
        .sub10,2,
        specR,modw,
        specE,modw,
        msegfix,src,        /* SEGFIX src */
        mdbn,2bh,           /* DB 2BH */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* TEST dst:Eb,src:Db */
test1   cmac14struc data(
        nil,2,
        specE,modb,
        specD,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0f6h,          /* DB 0F6H */
        mmodrm1,0,dst,      /* MODRM 0,dst */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* TEST dst:Ew,src:Db */
test2   cmac14struc data(
        .test1,2,
        specE,modw,
        specD,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0f7h,          /* DB 0F7H */
        mmodrm1,0,dst,      /* MODRM 0,dst */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* TEST dst:Ew,src:Dw */
test3   cmac14struc data(
        .test2,2,
        specE,modw,
        specD,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0f7h,          /* DB 0F7H */
        mmodrm1,0,dst,      /* MODRM 0,dst */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* TEST dst:Ab,src:Db */
test4   cmac9struc data(
        .test3,2,
        specA,modb,
        specD,modb,
        mdbn,0a8h,          /* DB 0A8H */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* TEST dst:Aw,src:Db */
test5   cmac9struc data(
```

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SER. #_____

```
        .test4,2,
        specA,modw,
        specD,modb,
        mdbn,0a9h,          /* DB 0A9H */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* TEST dst:Aw,src:Dw */
test6   cmac9struc data(
        .test5,2,
        specA,modw,
        specD,modw,
        mdbn,0a9h,          /* DB 0A9H */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* TEST dst:Eb,src:Rb */
test7   cmac12struc data(
        .test6,2,
        specE,modb,
        specR,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,84h,           /* DB 84H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* TEST dst:Ew,src:Rw */
test8   cmac12struc data(
        .test7,2,
        specE,modw,
        specR,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,85h,           /* DB 85H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* TEST dst:Rb,src:Eb */
test9   cmac12struc data(
        .test8,2,
        specR,modb,
        specE,modb,
        msegfix,src,        /* SEGFIX src */
        mdbn,84h,           /* DB 84H */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* TEST dst:Rw,src:Ew */
test10  cmac12struc public data(
        .test9,2,
        specR,modw,
        specE,modw,
        msegfix,src,        /* SEGFIX src */
        mdbn,85h,           /* DB 85H */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* WAIT */
```

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```
wait1   cmac3struc public data(
        nil,0,
        mdbn,9bh,           /* DB 9BH */
        mendm),             /* ENDM */

        /* XCHG dst:Eb,src:Rb */
xchg1   cmac12struc data(
        nil,2,
        specE,modb,
        specR,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,86h,           /* DB 86H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* XCHG dst:Ew,src:Rw */
xchg2   cmac12struc data(
        .xchg1,2,
        specE,modw,
        specR,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,87h,           /* DB 87H */
        mmodrm2,src,dst,    /* MODRM src,dst */
        mendm),             /* ENDM */

        /* XCHG dst:Rb,src:Eb */
xchg3   cmac12struc data(
        .xchg2,2,
        specR,modb,
        specE,modb,
        msegfix,src,        /* SEGFIX src */
        mdbn,86h,           /* DB 86H */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* XCHG dst:Rw,src:Ew */
xchg4   cmac12struc data(
        .xchg3,2,
        specR,modw,
        specE,modw,
        msegfix,src,        /* SEGFIX src */
        mdbn,87h,           /* DB 87H */
        mmodrm2,dst,src,    /* MODRM dst,src */
        mendm),             /* ENDM */

        /* XCHG dst:Rw,src:Aw */
xchg5   cmac14struc data(
        .xchg4,2,
        specR,modw,specA,modw,
        mdbit,              /* DBIT 5(10010B),3(dst(0)) */
        mnumberbits,5,12h,
        mformalbits,3,dst,0,
        mendbit,
        mendm),             /* ENDM */

        /* XCHG dst:Aw,src:Rw */
xchg6   cmac14struc public data(
```

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```
        ,xchg5,2,
        specA,modw,specR,modw,
        mdbit,              /* DBIT 5(10010B),3(dst(0)) */
        mnumberbits,5,12h,
        mformalbits,3,src,0,
        mendbit,
        mendm),             /* ENDM */

        /* XLAT dst:E */
xlat1   cmac7struc public data(
        nil,1,
        specE,nomod,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,0d7h,          /* DB 0D7H */
        mendm),             /* ENDM */

        /* XOR dst:Eb,src:Db */
xor1    cmac14struc data(
        nil,2,
        specE,modb,
        specD,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,80h,           /* DB 80H */
        mmodrm1,6,dst,      /* MODRM 6,dst */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* XOR dst:Ew,src:Db */
xor2    cmac14struc data(
        ,xor1,2,
        specE,modw,specD,modb,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,81h,           /* DB 81H */
        mmodrm1,6,dst,      /* MODRM 6,dst */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* XOR dst:Ew,src:Dw */
xor3    cmac14struc data(
        ,xor2,2,
        specE,modw,specD,modw,
        msegfix,dst,        /* SEGFIX dst */
        mdbn,81h,           /* DB 81H */
        mmodrm1,6,dst,      /* MODRM 6,dst */
        mdwf,src,           /* DW src */
        mendm),             /* ENDM */

        /* XOR dst:Ab,src:Db */
xor4    cmac9struc data(
        ,xor3,2,
        specA,modb,specD,modb,
        mdbn,34h,           /* DB 34H */
        mdbf,src,           /* DB src */
        mendm),             /* ENDM */

        /* XOR dst:Aw,src:Db */
xor5    cmac9struc data(
```

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```
                ,xor4,2,
                specA,modw,specD,modb,
                mdbn,35h,           /* DB 35H */
                mdwf,src,           /* DW src */
                mendm),             /* ENDM */

                /* XOR dst:Aw,src:Dw */
        xor6    cmac9struc data(
                ,xor5,2,
                specA,modw,specD,modw,
                mdbn,35h,           /* DB 35H */
                mdwf,src,           /* DW src */
                mendm),             /* ENDM */

                /* XOR dst:Eb,src:Rb */
        xor7    cmac12struc data(
                ,xor6,2,
                specE,modb,specR,modb,
                msegfix,dst,        /* SEGFIX dst */
                mdbn,30h,           /* DB 30H */
                mmodrm2,src,dst,    /* MODRM src,dst */
                mendm),             /* ENDM */

                /* XOR dst:Ew,src:Rw */
        xor8    cmac12struc data(
                ,xor7,2,
                specE,modw,specR,modw,
                msegfix,dst,        /* SEGFIX dst */
                mdbn,31h,           /* DB 31H */
                mmodrm2,src,dst,    /* MODRM src,dst */
                mendm),

                /* XOR dst:Rb,src:Eb */
        xor9    cmac12struc data(
                ,xor8,2,
                specR,modb,specE,modb,
                msegfix,src,        /* SEGFIX src */
                mdbn,32h,           /* DB 32H */
                mmodrm2,dst,src,    /* MODRM dst,src */
                mendm),             /* ENDM */

                /* XOR dst:Rw,src:Ew */
        xor10   cmac12struc public data(
                ,xor9,2,
                specR,modw,specE,modw,
                msegfix,src,        /* SEGFIX src */
                mdbn,33h,           /* DB 33H */
                mmodrm2,dst,src,    /* MODRM dst,src */
                mendm);             /* ENDM */

 19  1      end$module cmac5;
```

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SER. #_____

MODULE INFORMATION:

```
    CODE AREA SIZE     = 0000H      0D
```

```
    CONSTANT AREA SIZE = 026CH    620D
    VARIABLE AREA SIZE = 0000H     0D
    MAXIMUM STACK SIZE = 0000H     0D
    743 LINES READ
    0 PROGRAM ERROR(S)

END OF PL/M-86 COMPILATION
```

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P. O. BOX 579
PACIFIC GROVE, CA 93950

SER. #_____